A NEW GENUS FOR SEVERAL CHEYLETID MITES FORMERLY IN ACAROPSIS (ACARINA: CHEYLETIDAE)

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ABSTRACT—Action is taken to remove from *Acaropsis* Moquin-Tandon several species not congeneric with its type-species, *Tyroglyphus mericourti* Laboulbène. This species undoubtedly belongs to *Cheyletus* Latreille. Others hitherto assigned to *Acaropsis*, including *A. docta* (Berlese), are placed in a new genus, **Acaropsellina**, based on *Acaropsis sollers* Rohdendorf. *Acaropsellina* **anarsia** new species is here described.

It now appears that several species of mites presently assigned to *Acaropsis* Moquin-Tandon, 1862, are not congeneric with its type-species, *Acaropsis mericourti* (Laboulbène). The writer's attention recently focused on this matter when specimens were received from Dr. L. D. Charlet, University of California, Riverside. He had tentatively identified these mites as *Acaropsis mericourti* (Lab.) because the specimens sift to this name in Volgin's key (1969).

A search of old literature on *Acaropsis* reveals that recent students have improperly assigned other species to this genus. Laboulbène's (1851) description of *Tyroglyphus mericourti* is scarcely informative but the one illustration (his fig. 4) does not depict an *Acaropsis* species in the sense of current definitions of this genus (Oudemans, 1906; Baker, 1949; Volgin, 1969; Summers and Price, 1970). Laboulbène's illustration of *T. mericourti* shows a massive gnathosoma on which the femora of the pedipalps are robust and have diagonal lines of flexion with the sidewalls of the basis capituli. The coxal areas of the basis are mostly occupied by the extensive coxotrochanteral articulations. This is the structural pattern displayed by *Cheyletus* and its close allies.

The other species now assigned to *Acaropsis* have a different configuration to the mouthparts. In these forms the gnathosoma comprises a smaller fraction of total body length as compared with *Cheyletus* types (fig. 3). The palp femora are modest in girth and articulated with the basis in almost transverse lines of flexion. The basis thus resembles a short, flattened tube with movable mouthparts attached near its distal end.

While the true identity of *A. mericourti* may never be established beyond question, it is my opinion that Laboulbène incompletely described a nymph or a female of a species of *Cheyletus* which bears slender or acicular setae. Railliet (1886) expressed the belief

that the mite collected by Leroy Méricourt is possibly identical with *Cheyleté erudit*, now called *Cheyletus eruditus* (Schrank).

Laboulbène and Moquin-Tandon described the palp terminalia of "l'acaropse" as comprising 1 stout apical claw, 1 elaborately pectinate seta and 1 arcuate seta. The presence or absence of a smaller, internal comb (or its homologue) and an additional sicklelike seta is critical for distinguishing several of the more recently created genera of cheyletids. The revision here proposed is based on the premise that the original describers dealt with a species of *Cheyletus* and that both Laboulbène and Moquin-Tandon failed to illustrate or describe the other, smaller sensilla on the palp tarsus.

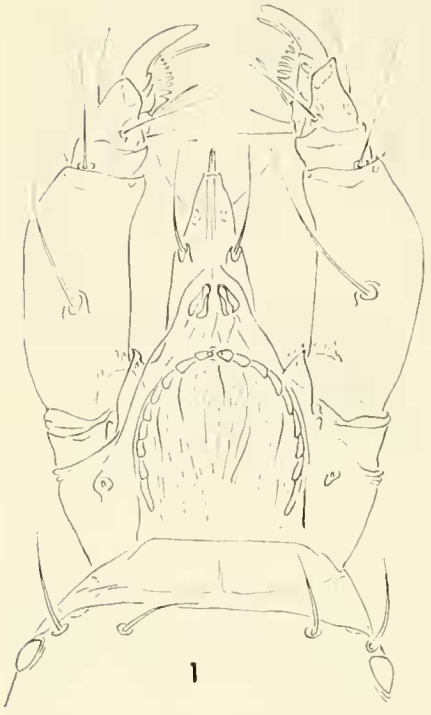
The species at hand which was first thought to be *Acaropsis mericourti* is a new species congeneric with those now called *Acaropsis docta* (Berlese) and *Acaropsis sollers* Rohdendorf. These 2 species are herewith transferred from *Acaropsis* Moquin-Tandon, based on *Tyroglyphus mericourti* Laboulbène, to a new genus having *sollers* as the type. The latter is selected in preference to the older *docta* because it has been redescribed in 2 modern works (Volgin, 1969; Summers and Price, 1970).

Oudemans (1906) included in *Acaropsis* a species which Karpelles (1884) described as *Cheyletus rufus*. Clues obtainable from Karpelles' illustrations indicate that *rufus* is not congeneric with *docta* and *sollers*. *Cheyletus rufus* is illustrated as having strongly barbed dorsal setae, a single basal tooth on the claw of the palp tibia, disproportionately long front legs and a very long, conspicuous guard seta covering the solenidion of tarsus I. It is advisable therefore to exclude *rufus* from consideration here. It appears to resemble species assigned to *Cheletomorpha* (Shaw) and was so regarded by Volgin (1969).

Acaropsellina Summers, new genus

Palp tarsus with 1 comblike sensillum, 2 sicklelike sensilla, 1 smooth acicular seta and 1 small solenidion; smooth acicular seta believed to be homologous with inner comb of other cheyletid genera. Claw on palp tibia with 2 or 3 pointed denticles on mesal face. Rostrum prominently displayed, conical, tapered to an almost pointed apex, approximately as long as palp femur. Peritremes form horseshoe pattern, without abrupt changes in curvature, 6–7 links or cells per side. Idiosoma rhombic or somewhat lozenge-shaped, widest behind legs II. Dorsal plating lightly sclerotized, faintly tanned in some specimens; 2 large median plates incompletely cover dorsum; humeral setae set on 1 pair of laterally situated platelets; sternal plating absent. Eyes small but well-defined. Dorsal body setae acicular to narrow lanceolate. Humeral setae flagelliform, much longer than dorsal body setae, smooth or nearly so. Tarsi I–IV with paired claws and multirayed empodia; claws hooklike, without basal swellings or apophyses.

Type-species: *Acaropsis sollers* Rohdendorf, 1940, by present designation.



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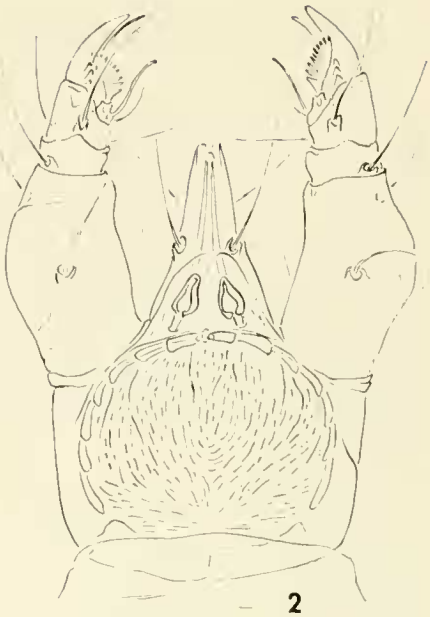

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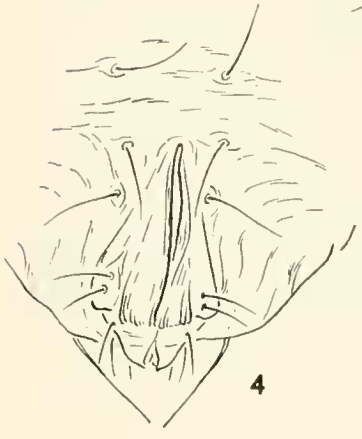

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Acaropsellina anarsia Summers, new species
fig. 1–5

Female: Palptarsal comb bears approximately 10 stubby tines; basal tine triangular, more robust than more distal tines (fig. 2). Seta corresponding to inner comb of other genera acicular, apparently smooth. Tegmenal surface of stylophore with striae broken into short, varicose segments covering almost entire upper surface, these in longitudinal rows some of which converge towards middorsal line. Two weakly sclerotized dorsal plates, both plates with faint broken striae; striae mostly in longitudinal direction; some striae arranged so as to form imperfectly developed meshwork or coarse reticulum; network better defined on margins of propodosomal plate, scarcely discernible on hysterosomal plate. Dorsal body setae acicular, barbed, sharply pointed, all fairly short. Dorsomedians slightly shorter than dorsolaterals, 2–3 pairs on propodosomal plate, 3–4 pairs on hysterosomal plate. Humeral setae flagelliform, with few basal barbs, slightly more than 2× longer than nearest dorsolaterals (*he* = 70μ on holotype). Numbers of setae on podomeres of legs I–IV: femora 2-2-2-1, genua 3-2-2-2, tibiae 6-4-4-4, tarsi 9-8-7-7. Measurements of several parts of 4 specimens (range, in microns): gnathosoma—dorsal baseline of stylophore to tip of rostrum = 113–121; idiosoma—dorsal baseline of stylophore to rear end of opisthosoma = 357–372; leg I—proximal tip of trochanter to tip of claws = 205–228; dorsal seta on palp femur = 51–55; vertical seta = 27–27; humeral seta = 70–86; 1st dorsolateral seta on hysterosoma = 31–35; 1st dorsomedian seta on hysterosoma = 23–27; solenidion *w* I = 39–43.

Male: Rostrum and palp femur slightly longer than for female but not obviously heteromorphic in form. Tibia II, tarsi III and IV with 1 small mesoventral solenidion each. Basis capituli with a bulbous protuberance below coxotrochanteral articulation of each side; each protuberance with thin, transverse flange serrated to form an arched row of 5 or more anteriorly directed denticles (fig. 1).

Type-series: 7 ♀♀, 1 ♂, C. A. Fleschner, Colr. Five paratype ♀♀ (one slide) deposited in United States National Museum, Washington, D.C., holotype ♂ and other paratypes (one slide in Entomology Museum, University of California, Davis).

The action taken in this paper creates new name combinations for the 2 previously described species, viz., *Acaropsellina sollers* (Rohdendorf), NEW COMBINATION, and *Acaropsellina docta* (Berlese), NEW COMBINATION. It is believed that the species of this new genus are separable according to the characters given in the key below.

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Fig. 1–5, *Acaropsellina anarsia*. 1, Gnathosoma of male, dorsal. 2, Gnathosoma of female, dorsal. 3, Dorsal aspect of female. 4, Anogenital region, female. 5, Illustration of several setae, l. to r.: anterior dorsomedian of propodosoma; humeral; 1st dorsolateral of hysterosoma. Index lines = 0.01 mm, applicable only to adjacent figures.

Key to Females of Acaropsellina Summers

1. Dorsal body setae acicular, barbed, sharply pointed ..... *anarsia*, new species
— Dorsal body setae plumose, with slightly widened blades, tips blunt, frayed or fringed 2
2. Two pairs of dorsomedian setae on propodosomal plate ..... *sollers* (Rohdendorf)
— Three pairs of dorsomedian setae on propodosomal plate ..... *docta* (Berlese)

References

Baker, E. W. 1949. A review of the mites of the family Cheyletidae in the United States National Museum. Proc. U.S. Natl. Mus. 99(3238):267–320.

Karpelles, L. 1884. Neue Milben. Berlin Entomol. Zeitschr. 28:231–244.

Laboulbène, M. A. 1851. Description de quelques Acariens et d'une Hydrachne. Ann. Soc. Entomol. Fr. (Ser. 2). 9:295–303.

Moquin-Tandon, Cretien, H. B. A. 1862. Éléments de zoologie médicale, contenant la description detaillée des animaux utiles a la médicine. 451 pp. J. B. Baillière et Fils, Paris. (In N.Y. Acad. Med., author catalogue of the library, 27:256).

Oudemans, A. C. 1906. Révision des Chélétinés. Mém. Soc. Zool. Fr. 19:36–218.

Railliet, A. 1886. Éléments de Zoologie Médicale et Agricole. 1053 pp. Asselin et Houzeau, Paris.

Rohdendorf, B. B. 1940. Mites of the families Cheyletidae and Pediculoididae. (in Russian). Moscow Univ. Uchenye Zapiski, Wissensch. Ber. 42:69–98.

Summers, F. M. and D. W. Price. 1970. Review of the mite family Cheyletidae. Univ. Calif. Publ. Entomol. 61:1–153.

Volgin, V. I. 1969. Acarina of the family Cheyletidae, world fauna. Akad. Nauk. SSSR, Zool. Inst., Opredel. Faun. SSSR. 101:1–432.